1. A misfire detector of an internal combustion engine utilizing a crankshaft capable of rotating at different rotation periods, the detector comprising:

a map for storing misfire determination values as a basis for determining engine misfiring, each value associated with one of the rotation periods;

means for computing an engine speed fluctuation quantity, according to engine speed, for a predetermined period of time; and

means for detecting a misfire according to the stored misfire determination values and the calculated engine speed fluctuation quantity.

2. The misfire detector according to claim 1, wherein the engine speed fluctuation computing means ca lculates an engine speed difference between a present engine speed and a prior combustion stroke of consecutive combustion strokes of the engine every time the crankshaft makes one rotation, and wherein the engine speed fluctuation computing means calculates the engine speed fluctuation quantity for a predetermined period of time according to a present and a prior calculated engine speed difference.

3. The misfire detector according to claim 2, wherein the engine speed fluctuation computing means calcula tes an engine speed difference between same phase engine speeds of present and last combustion strokes of consecutive

combustion strokes every time the crankshaft makes one rotation.

4. The misfire detector according to claim 1, wherein each of the engine rotation periods is calculated according to a latest measured time that the crankshaft takes to make one rotation.

5. A misfire detector for an internal combustion engine of a vehicle, comprising:

means for detecting rotational fluctuation values of the engine;

means for learning variation values of the rotational fluctuation values detected by the rotational fluctuation detecting means;

means for determining from the variation values learned by the learning means and the rotational fluctuation value detected by the rotational fluctuation detecting means to determine whether the engine is misfiring;

a random access memory (RAM) for storing the learned value; and

a rewritable nonvolatile memory for storing the learned value, wherein the learned value stored in the RAM is rewritten every time the learning means computes a new learned value; and

wherein the learned value stored in the nonvolatile memory is rewritten only on a predetermined condition.

6. The misfire detector according to claim 5, wherein the learned value stored in the nonvolatile memory is rewritten every time the engine has run once or a predetermined number of times.

7. The misfire detector according to claim 5, wherein the learned value stored in the nonvolatile memory is rewritten every time a predetermined period of time passes or every time the vehicle has run a predetermined distance.

8. The misfire detector according to claim 5, wherein the learned value stored in the nonvolatile memory is rewritten every time a misfire is detected.

9. The misfire detector according to claim 5, wherein the RAM has a backup power supply supplied with a voltage from the battery mounted in the vehicle.

10. The misfire detector according to claim 9, wherein if the data stored in the RAM is erased when the battery is removed, the learned value stored in the nonvolatile memory is written in the RAM when the backup power supply of the RAM is restored.

11. The misfire detector according to claim 5, wherein the learned value stored in the nonvolatile memory is

rewritten when the ignition switch of the vehicle is turned off, and wherein the stored value is written in the RAM during the initialization performed immediately after the ignition switch is turned on.